IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently amended) A method for ~~the diagnosis of SMEI in a patient~~ determining the likelihood that a patient suspected of SMEI does or does not have SMEI comprising:

(1) ~~detecting~~ testing a patient sample for the existence of an alteration in the SCN1A gene of the patient, including in a regulatory region of the gene~~, in a patient sample~~;

(2) (a) terminating the process with an inconclusive diagnosis if no alteration is found; or

(b) identifying the alteration;

~~(2)~~ (3) ascertaining whether the alteration, when one is detected, is known to be SMEI associated or non-SMEI associated or is not known to be either; wherein ~~and~~

~~(3)~~ (a) ~~establishing~~ a diagnosis ~~of~~ which will indicate a high probability of SMEI is made where the alteration is known to be SMEI associated; ~~or~~

(b) ~~establishing~~ a diagnosis ~~of~~ which will indicate a low probability of SMEI is made where the alteration is non-SMEI associated; or

~~(d)~~ (c) ~~or, if not known to be either,~~ further analysis is undertaken to establish whether the alteration is a SMEI associated or a non-SMEI associated alteration.

~~(i) considering genetic data for parents and/or relatives;~~

~~(ii) establishing whether the alteration has arisen *de novo* or is inherited; and~~

~~(iii) establishing a diagnosis of a low probability of SMEI where the alteration is inherited but a diagnosis of a high probability of SMEI if the alteration is *de novo*.~~

2. (Currently amended) A method as claimed in claim 1 further comprising establishing whether the alteration would result in a major disruption to ~~the~~ a protein ~~and, if *de novo*, establishing a diagnosis of a very high probability of SMEI~~.

3. (Original) A method as claimed in claim 2 wherein the alteration is a truncating mutation.

4. (Original) A method as claimed in claim 1 wherein the alteration is one identified in Table 3 as SMEI associated or non-SMEI associated.

5. (Original) A method as claimed in claim 1 comprising performing one or more assays to test for the existence of an SCN1A alteration and to identify the nature of the alteration.

6. (Currently amended) A method as claimed in claim 5 ~~comprising:~~ wherein the performing one or more assays comprises:

(1) performing one or more assays to test for the existence of an alteration in the SCN1A gene of the patient; and if the results indicate the existence of an alteration in the SCN1A gene;

(2) performing one or more assays to identify the nature of the SCN1A alteration.

7. (Original) A method as claimed in claim 5 wherein one of the assays is a DNA hybridisation assay.

8. (Original) A method as claimed in claim 7 wherein an SCN1A gene probe, an SCN1A exon-specific probe, or an SCN1A allele specific probe is hybridised to genomic DNA isolated from said patient.

9. (Original) A method as claimed in claim 5 wherein one of the assays is high performance liquid chromatography.

10. (Original) A method as claimed in claim 5 wherein one of the assays is an electrophoretic assay.

11. (Currently amended) A method as claimed in claim 5 wherein ~~the~~ a sample DNA to be tested is quantitatively amplified for at least one exon of the SCN1A gene to produce amplified fragments and the length of the amplification products for each amplified exon is compared to the length of the amplification products obtained when a wild-type SCN1A gene is amplified using the same primers, whereby differences in length between an amplified sample exon and the corresponding amplified wild-type exon reflect the occurrence of a truncating alteration in the sample SCN1A gene.

12. (Original) A method as claimed in claim 5 wherein one of the assays incorporates DNA amplification using SCN1A allele specific oligonucleotides.

13. (Original) A method as claimed in claim 5 wherein one of the assays is SSCP analysis.

14. (Original) A method as claimed in claim 5 wherein one of the assays is RNase protection.

15. (Original) A method as claimed in claim 5 wherein one of the assays is DGGE.

16. (Original) A method as claimed in claim 5 wherein one of the assays is an enzymatic assay.

17. (Original) A method as claimed in claim 16 wherein said assay incorporates the use of MutS.

18. (Withdrawn) A method as claimed in claim 5 wherein one of the assays examines the electrophoretic mobility of the SCN1A protein of the patient.

19. (Withdrawn) A method as claimed in claim 5 wherein one of the assays is an immunoassay.

20. (Original) A method as claimed in claim 5 wherein one of the assays is DNA sequencing.

21. (Currently amended) A method for ~~the diagnosis of SMEI in a patient~~ determining the likelihood that a patient suspected of SMEI does or does not have SMEI, comprising:

(1) ~~detecting~~ testing a patient sample for the existence of an alteration in the SCN1A gene of the patient, including in a regulatory region of the gene~~, in a patient sample, and~~

(2) (a) terminating the process with an inconclusive diagnosis is no alteration is found; or

(b) identifying the alteration;

(3) ascertaining whether the alteration, when one is detected, is as laid out in Table 3 as SMEI associated or non-SMEI associated, or is not known to be either; wherein

(a) ~~establishing~~ a diagnosis which will indicate ~~of~~ a high probability of SMEI is established if a SMEI associated alteration as laid out in Table 3 is identified ~~or, in the alternative~~,

(b) ~~establishing an~~ a diagnosis which will indicate ~~of~~ a low probability of SMEI is established if a non-SMEI associated alteration as laid out in Table 3 is identified, or

(c) further analysis is undertaken to establish if the alteration is a SMEI associated or non-SMEI associated alteration.

22. (Withdrawn) A method of determining the appropriate treatment for a SMEI patient comprising performing the method claimed in claim 1 or 21 and correlating the diagnosis reached with known indications and contra-indications for SMEI patients.

23. (Withdrawn) A method of determining the likelihood of adverse results from treatments of a SMEI patient including drug treatments and vaccinations

comprising performing the method as claimed in claim 1 or 21 and correlating the diagnosis reached with known indications and contra-indications for SMEI patients.

Please add the following new claims:

24. (New) A method as claimed in claim 1, wherein the likelihood that the alteration is a SMEI associated alteration is established through:

(a) considering genetic data for parents or relatives; and

(b) establishing whether the alteration has arisen *de novo* or is inherited.

25. (New) A method as claimed in claim 2, comprising establishing a diagnosis which will indicate a low probability of SMEI in the case of an inherited mutation and indicate a high probability of SMEI in the case of a *de novo* mutation, and a very high probability of SMEI where a *de novo* mutation would result in a major disruption to the protein.